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Validation of the SMILES Level2 ozone data by using ozonesonde measurements

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   To demonstrate the high sensitivity of 4-K cooled sub-mm limb sounders and to monitor global distributions of the stratospheric trace gases, the Japan Aerospace eXploration Agency (JAXA) launched the Superconducting Submillimeter-Wave Limb-Emission Sounder (SMILES) instrument to the International Space Station (ISS) in 2009 using the H-II Transfer Vehicle (HTV). SMILES has been transferred to normal operation phase on 6th November, 2009. Currently, level 2 (L2) data products of the SMILES measurements has been evaluated.

   Here we show the early validation results of the SMILES L2 ozone measurements using worldwide ozonesonde sounding net work data (SOWER, SHADOZ, WOUDC). SMILES L2 ozone data in the lower stratosphere are validated using near-coincident ozone measurements by analysing volume mixing ratio profiles. The average values of the mean relative differences are consistent within the margin of error.

Keywords: SMILES, ozonesonde